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# Education and Mindfulness in the Treatment of Substance Use Disorders

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Education and Mindfulness in the Treatment of Substance Use Disorders

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### Abstract

*Background:* The complex psychological and social needs of patients with substance use disorders present challenges for healthcare providers. A multidisciplinary approach that includes medications, psychosocial treatment, and education to assist the patient with disease management is common. This approach improves outcomes and promotes recovery. Evidence clearly suggests that tailored treatment programs incorporating medication-assisted treatment (MAT) in conjunction with behavioral modification and psychotherapy yield positive treatment outcomes (NIDA, 2016). *Purpose:* The purpose of this project was to determine whether an educational program coupled with existing treatment modalities was comprehensive and innovative in MAT approaches. The educational program focused on risks of drug abuse, triggers, stress, cravings, and wellness topics, as well as incorporating the use of mindfulness exercises. *Methods* A post intervention questionnaire and verbal feedback from the participants was used to assess effectiveness of the educational program. *Results* The data showed that the educational program was well received and acceptable for use in the MAT setting. *Conclusion* Education in chronic disease management and the use of mindfulness techniques were both shown to be feasible and acceptable, which may prove beneficial in reducing the likelihood of relapse in patients with substance use disorder.

*Keywords:* substance use disorder, education, mindfulness, medication assisted treatment

## Education and Mindfulness in the Treatment of Substance Use Disorders

### **Introduction and Background**

Heroin use and death by overdose has increased steadily since 2007 and has become a priority for health care professionals, government agencies, and policy makers. More specifically, heroin use accounted for 10,500 deaths in 2014, which is an increase of 26% from the previous year (Center for Disease Control [CDC], 2016). In Massachusetts alone, there were 1,379 confirmed overdose deaths in 2015 (Mass.gov, 2016). The Governor of Massachusetts' action plan outlines current recommendations to decrease harm related to drug addiction by focusing on public awareness, education, prescribing practices, and the use of prescription monitoring systems, along with removal of insurance barriers and an increase of access to treatment (Governor's Opioid Working Group [Mass] 2015).

The delivery of substance abuse treatment must meet the complex needs of people who suffer from substance use disorders (SUD). Treatment must be individualized, readily available, and multidisciplinary to address the physical and psychosocial needs of the patient (National Institute on Drug Abuse [NIDA], 2016). According to the American Society of Addiction Medicine (ASAM), addiction is "a primary, chronic disease of brain reward, motivation, memory and related circuitry" (ASAM, 2015). Addiction is characterized by inability to abstain, impaired behavior, craving, diminished recognition of problems and dysfunctional emotional responses (ASAM, 2011). Patients with SUDs represent an underserved marginalized population at risk for significant adverse health outcomes such as infectious diseases, overdose and death (Bayles, 2014). The leading cause of death for misuse of opioids includes trauma and overdose (ASAM, 2015). Addiction is an acute and chronic health problem characterized by periods of wellness and relapse (Pating, Goplerud, Martin, Miller, & Ziedonis, 2012).

Continuity of care is the standard for chronic illnesses; however, individuals with SUDs receive episodic medical and specialty care (Pating et al., 2012). Effective treatment involves improved access to care, tailoring the program to the patients' needs, and assessing and modifying treatment modalities based on patient assessment (NIDA, 2016). Improved problem solving and resistance of drug cravings are among the skills people with SUDs will need to effectively manage relapse (NIDA, 2016). Approximately 23 million Americans suffer from SUDs with only an estimated 10% receiving any treatment (Pating et al., 2012). Comprehensive treatment programs informed by evidence-based information are necessary to address the complex needs of individuals who struggle with SUD. Behavioral interventions for the treatment of SUD include skills training and efforts to change thinking or behavior (Bayles, 2014). Mindfulness training helps build the skills necessary to resist drug use when faced with triggers or cravings, and assists the individual in making healthier choices. Motivation is a key factor for change and strategies may include: focusing on individual strengths, motivational approaches, less intensive treatments, therapeutic relationships, and the integration of treatments with other disciplines (Center for Substance Abuse Treatment; 1999). Education of chronic disease management and simple mindfulness techniques, in conjunction with existing modalities, may prove beneficial in SUD treatment.

### **Problem Statement**

SUD is classified as a chronic disease (ASAM, 2015), highlighting the need for evidence-based education and resources to manage the challenges and sequelae of chronic disease. Chronic disease is characterized by periods of disease exacerbation and wellness over a period of time. Treatment of SUDs include psychosocial and individualized therapeutic interventions and medications (ASAM, 2015; see Figure 1). Addiction is characterized as a chronic brain disease

and people are prone to relapse after abstinence (ASAM, 2015). The patient's risk of death and other adverse events increase when he or she chooses to use drugs during a relapse after a period of abstinence. This type of behavior also increases the risk of overdose due to lower tolerance levels (Coffin, 2017). A patient's body is unable to tolerate the amount of drug used prior to the abstinence period, thus he or she may unintentionally overdose when resuming prior drug habits. Education and mindfulness techniques may be useful strategies to improve self-care skills and prevent the likelihood of relapse and harm, especially when taught during times of wellness. For individuals who are already in treatment for substance abuse, focus on prevention of relapse is also recommended (ASAM, 2015). Self-management skills, goal setting, and identification of barriers are essential components of successful drug treatment. High levels of stress or stress reactivity contribute to increased risk of relapse (McKay, 2017).



Figure 1. Components of Comprehensive Treatment of SUD.



Principles of drug treatment include a range of services including psychosocial, medical, and support services tailored to the patient. Figure 1 demonstrates the components of comprehensive treatment of SUD (CDC, 2016).

### Review of the Literature

A literature search was performed via the UMASS library database collection, including: CINAHL, Academic Premier, and Pubmed. The search utilized the following terms: *relapse prevention, substance abuse, education, heroin, relapse education, relapse prevention strategies, drug abuse, patient education, addiction treatment, and mindfulness*. Approximately 1,500 articles were accessed. After limiting the articles to the last four years (2012 – 2016), approximately 200 articles remained and the abstracts were read to evaluate the relevancy to the topic. A total of 30 resources were chosen based on this information. Additionally, resources from the NIDA (2016) guidelines, as well as treatment guidelines from the ASAM (2015) were utilized.

Previous treatment models, such as 12-step programs, promote abstinence from substance use, while mindfulness-based relapse prevention (MBRP) recognizes relapse as possible and instills methods to recognize and address the behaviors and feelings leading to drug use (NIDA, 2016). Reducing the potential harm from relapse is the goal of MBRP strategies (Sonali, 2014). In individuals that have not experienced relapse, the focus is on prevention strategies that reduce the likelihood of relapse occurring. Another aspect of SUD is the presence of craving, which stems from biological processes and cognitive reactions to triggers that illicit strong responses to substance use (Witkiewitz, Bowen, Douglas, & Hsu, 2012). MBRP teaches techniques to endure unpleasant sensations related to cravings, acknowledge the associated discomfort, and choose alternate methods to cope with feelings other than substance use.

Addiction is a chronic illness with periods of illness and wellness, and teaching patients about chronic disease processes will enhance their knowledge of SUD, as well as their capacity for disease management. Improving coping skills and making mindful choices enables individuals to avoid potentially harmful actions. For example, when responding to unpleasant

feelings, patients can choose a mindful response in which they acknowledge the feeling and make a healthier choice. MBRP is an intervention that complements addiction treatment by specifically targeting the feelings and coping skills of a patient that struggles with substance abuse. Evidence suggests that mindfulness treatments are increasing in popularity for the treatment of SUD due to their demonstrated reduction in the use of substances (Chiesa & Serretti, 2014). MBRP has shown benefits in decreasing substance abuse after three months, positive increase in stress management, and increase use in the home. Evidence-based coping strategies include: learning about consequences of drug use, recognizing cravings, recognizing and avoiding high risk situations, and developing techniques to address cravings (NIDA, 2016). Mindfulness-based practices are one minute or less and include breathing exercises, focusing on objects, and tactile and sensory exercises that are designed to refocus attention on the feeling or sensation in the present moment. The exercises are intended to increase the patient's awareness of their surroundings and decrease stress, anxiety and uncomfortable feelings, while focusing on the present moment. Mindfulness provides the patient with skills to recognize uncomfortable feelings associated with cravings, cope with them, and provide alternative and more positive methods to avoid impulsive and habitual behavior patterns (Witkiewitz et al., 2012). These mindfulness and education sessions may assist with recovery as patients learn alternative ways to address stress and achieve wellness through diet, exercise, and sleep. This is the premise for the holistic multidisciplinary intervention that may prove beneficial and useful for patients who struggle with SUDs. Medication-assisted treatment (MAT) programs use medications to manage the symptoms of abrupt withdrawal from substances and prevent relapse. However, MAT in itself is not the sole treatment for SUD, which is considered a biological, social, spiritual, and psychological disease (ASAM, 2015). MAT programs utilize partial and full agonists including

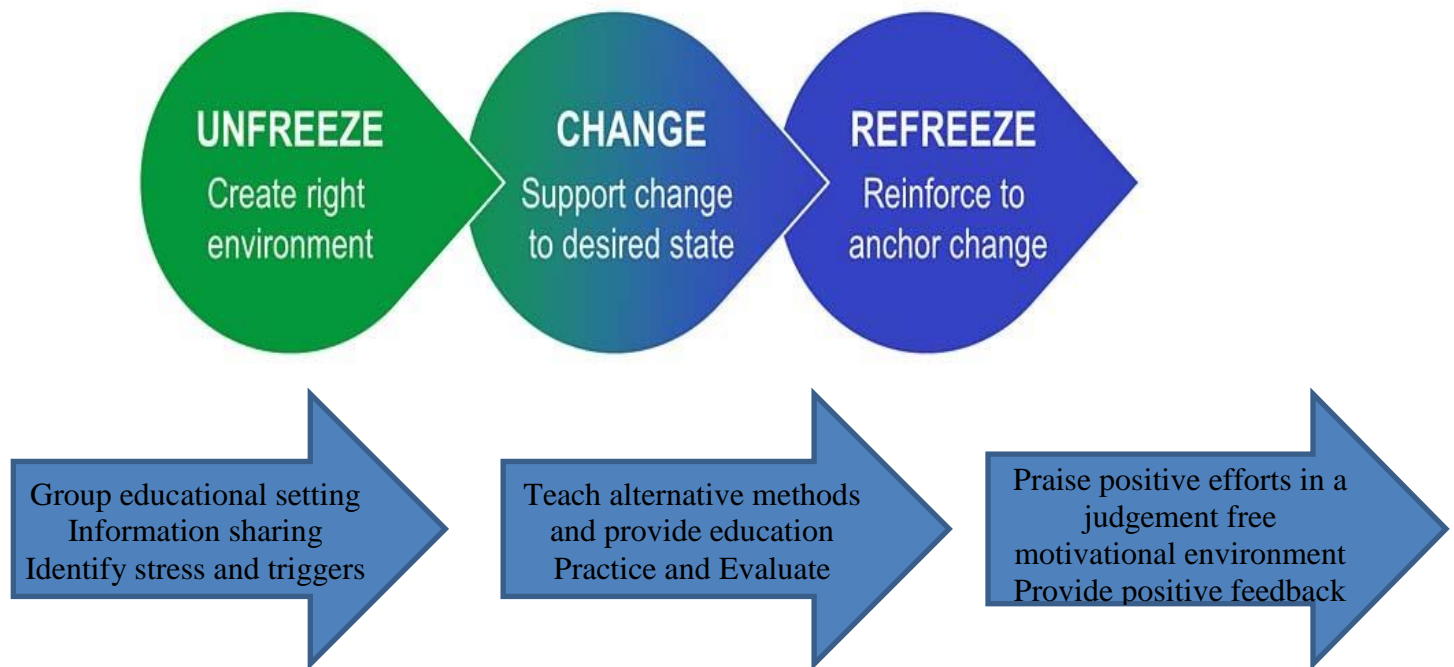
buprenorphine, methadone and naltrexone to treat symptoms of withdrawal of SUD (ASAM, 2015). Combining MAT and psychotherapeutic interventions is an evidenced-based practice standard in the treatment of patients with SUD (ASAM, 2015).

### **Theoretical Framework**

The foundation of Kurt Lewin's change theory (2011) involves replacing previous learned behaviors with a new process of unfreezing, movement, and refreezing (see Figure 3). The three main concepts of the theory include a) driving forces, b) restraining forces, and c) equilibrium. The goal of the theory is to identify driving and restraining forces. In the first stage, unfreezing involves discovering a method that assists people to let go of previous habits that were detrimental and overcome resistance to change. The second stage involves changing thoughts, feelings, or behaviors to allow for increased productivity, and consequently liberating oneself from detrimental behaviors. The last stage involves refreezing the new, desired behavior. This last stage allows the change to solidify, leading to the avoidance old habits. Overall, the purpose of the project intervention was to identify personal stress and triggers, provide mindfulness tools and education to identify stress and triggers and learn healthy habits, and teach patients tools that may improve disease management and avoid harmful drug use.

Figure 3. Theoretical Change model and relation to SUD.

## Kurt Lewin Change Model



Thus, providing education and brief mindfulness techniques will assist the individual to develop life skills and provide education to make positive lifestyle changes to resist drug use (Lewin, 2011).

### Project Design, Methods, and Implementation

#### Goals, Objectives, and Data Analysis

The purpose of this project was to determine whether an educational program and mindfulness exercises, in addition to existing treatment modalities, was helpful and innovative for use in combination with existing MAT programs. The project consisted of five separate

education sessions designed to educate participants regarding addiction as a chronic disease, the importance of wellness and mindfulness, and skills to increase self-management of the sequelae of SUD. After the education sessions were completed, participants were asked to complete a questionnaire to assess the understandability and helpfulness of information, the likeliness to utilize the information, and whether participants would recommend the program to a friend or attend future sessions.

**Setting and resources.** The project took place at a newly opened MAT program in Springfield Massachusetts. The setting was urban, with an approximate population of 150,000 people, where 24% of the population identifies as Hispanic. This city also has the third highest poverty rate when compared with eight peer cities (“Springfield, Massachusetts,” 2016). This program was located within walking distance from downtown and easily accessible via bus route. The sessions took place in a small conference room on the premises that comfortably seated 12 participants, including the DNP student and physician co-facilitator, the sessions were one hour long. The primary payer source for the practice is a Medicaid and/or Medicaid managed plan, accounting for greater than 70% of funding for the clinic. Additional payer sources include Medicare, commercial payers, and a small percentage of private pay clients (O. Faruk, personal communication, March, 15, 2017).

**Description of the population.** The patients treated in the clinic suffered from heroin, opiate, alcohol and other drug dependencies, with the majority suffering from opiate and heroin misuse (O. Faruk, personal communication, March 15, 2017). The participants were in treatment at the facility and were mandated to meet with a physician to discuss any concerns and participate in a teaching session to increase education and awareness of SUD and treatment as part of their treatment plan.

**Educational intervention.** Information in the form of PowerPoint guidelines were created with evidenced-based resources. Printed materials were also used to guide the teaching sessions. The DNP student and a physician co-facilitator led the group education. The education was designed to assist the participants in learning about disease processes, wellness, and management of their substance use disorder. Pertinent educational materials were presented based on the topic. Additional time was allowed for participation, questions, and feedback. Each session focused on educational themes related to substance abuse disorders and encompassed topics along the illness and wellness continuum. After the presentation, dialogue was encouraged amongst the peer group and a white board was used to share ideas and thoughts. Mindfulness practice exercises were completed during some sessions and time was allotted for the participants to learn and practice techniques to assist them in their recovery. Participants attended one scheduled class. Educational topics were presented in small peer groups focusing on addiction principles, disease trajectory, and management of disease processes (including stress and triggers). The presentations covered stress and relapse triggers, sleep, smoking cessation, diet and exercise, and tips to achieve wellness in recovery. Brief mindfulness interventions, such as breathing and focusing exercises were also covered. Group discussions and multimedia education were utilized in an informal peer-group setting.

There were a total of five educational groups held, each participant attended one group, and 10-12 participants were scheduled for each group.. Groups 1 and Group 2 covered stress. Group 1 covered the physiological and psychological effects of stress, identification of stressors, and education regarding alternative methods for coping with stress. A white board was used to promote group dialogue, identify stressors amongst the participants, and identify the stress reduction techniques that worked for this group. Group 2 was a combination of stress, similar to

Group 1, and education regarding relapse triggers (including the identification of different types of triggers and how to identify one's own personal triggers). Again, group dialogue was encouraged with the use of a white board, and participants shared their own personal experiences of relapse trigger management. Mindfulness relaxation techniques, such as focusing and breathing exercises to assist with stress reduction and craving management, concluded the sessions for Group 1 and Group 2. The first mindfulness exercise involved focusing on an object (a flame or photo) and the second exercise was a deep breathing exercise. Both techniques were covered with the intention of teaching the participant a mindful response to relapse triggers or stress. Handouts highlighting wellness topics including, nutrition, stress, smoking cessation, and sleep from evidenced-based government websites (i.e., the American Heart Association, Center for Disease Control, National Institute of Health, and other relevant websites), were available for participants to take home after the sessions. The handouts covered sleep, HIV (not covered in education), exercise, diet, and smoking cessation (also not covered). Individuals were encouraged to dialogue with peers and ask questions after the material was presented.

Sleep was covered in group three. The choice of covering sleep was a result of informal feedback during the session on stress, as many participants reported disruption in sleep as a result of stress. Group 3 educated patients regarding the importance of sleep, sleep hygiene, and non-pharmacological measures to promote sleep. Group 4 provided education regarding the importance of diet and exercise in wellness, along with healthy eating. Tips for healthy eating were covered (i.e., reading labels) and healthy snacks were provided. Group 5 focused on the same information as Group 4 and the DNP student provided healthy snacks and a few items for label reading and comparison. After the completion of the education presented by the DNP student and physician co-facilitator, the DNP distributed the questionnaire for completion.



**Questionnaire.** Due to the sensitive nature of patients with SUDs, all information collected was anonymous and patients were only identified by a number. The goal was to collect completed questionnaires from 50 participants. The questionnaire had three components: a) helpfulness and usefulness of information questions, b) future attendance questions and c) open-ended questions. To evaluate the helpfulness of the program, there were 5 questions participants were asked to rate on a scale of 1 (*poor*) to 5 (*excellent*; see Appendix A). The second set of questions examined the usefulness of information and future attendance (see Appendix B). Again, 5 questions were asked and participants rated their responses using a scale from 1 (*no*) to 5 (*very likely*). The open-ended portion of the questionnaire asked participants for suggestions regarding the group education, future topics, suggestions to improve the program, and any other feedback they wished to offer. The questionnaire was written in simple language to ensure it was readable, understandable, and easy for the participants to respond. In addition, assistance was offered to participants to read or answer any questions. The questionnaires were distributed at the end of each session and were voluntary.

**Data collection and analysis.** The questionnaires were paper-based and the data was entered into an Excel worksheet for evaluation. The number of participants who completed the questionnaire was included in the final analysis and only the information necessary for data collection was collected. Group # 1 had 10 participants, group #2 had 8 participants, group 3 had 10 participants, group 4 had 9 participants and group #5 had 10 participants. Of the 47 participants, 37 completed the survey after the group session. After the data was transferred, all paper-based completed questionnaires were destroyed according to facility policy.

First, percentages were computed for each question and response type. For example, for the first question in set one, “*How helpful is the information presented in the program?*” the

percentage of responses for *excellent*, *very good*, *good*, *fair* and *poor* were all computed (see Appendix A and B). This process was completed for each question. Data was then analyzed separately for the two groups of questions (the helpfulness and usefulness of education questions and the likeliness to return questions). Specifically, an average for all of the *excellent* scores across the five items for the helpfulness questions was computed to give an overall helpfulness score. This was repeated for *very good*, *good*, *fair*, and *poor*. The same process was used for the second set of questions. Again, computing an average across the five questions provides an overall percent score. For the open-ended questions, all the written responses were included in the results and feedback.

**Ethics and human subjects' protection.** Protection of the participants was a priority of the DNP student. Due to the sensitive nature and stigmatization of patients with SUDs, ensuring anonymity was critical. Other than race and gender, no other identifying information was collected. An IRB was not indicated for the project as it does not meet criteria for human research, as determined by the Human Research Determination Committee at the University of Massachusetts Amherst. The purpose of this project was for educational use only.

## Results

A total of 47 participants completed the educational intervention, with a total of 37 questionnaires completed. The questionnaires were voluntary and 10 people declined to complete the questionnaire. The gender of the participants was 73.0% male and 27.0% female. The racial composition included: 54% Hispanic, 43% Caucasian, and 3% African American.

### Helpfulness Questions

For Group 1, the average response to all five questions regarding helpfulness and understandability of the material presented was as follows: 52% chose *excellent*, 28% chose *very good*, 20% chose *good*, and 0% chose *fair* or *poor*. For Group 2, the average response to all five questions was as follows: 70% chose *excellent*, 10% chose *very good*, 17% chose *good*, and 0% chose *fair* or *poor*. For Group 3, the average response to all five questions was as follows: 74.2% chose *excellent*, 8.4 % chose *very good*, 14% chose *good*, and 14% chose *fair* and 0% chose *poor*. For Group 4, the average response to all five questions was as follows: 85.4% chose *excellent*, 9.8% chose *very good*, 4.8% chose *good*, and 0% chose *fair* or *poor*. For Group 5, the average response to all five questions was as follows: 76.7% of respondents chose *excellent*, 13.4% chose *very good*, 10.2% chose *good*, and 0% of chose *fair* or *poor*. To summarize, more than half of the participants (ranging from 52.0%-85.4%) rated the sessions as *excellent*. Additionally, 8.4%- 28% of the participants rated the sessions as *very good*, 4.8% to 20% rated the sessions as *good*, and 14% *fair response* in regards to helpfulness of handouts and 0% *poor* responses were noted.

### **Helpfulness of information and likeliness to return**

For Group 1, the average response to all five questions was as follows: 43.3% chose *very likely*, 33.3% chose *likely*, 23.3% chose *may* return to another group, and 0% chose *unlikely* or *no*. For Group 2, the average response to all five questions was as follows: 61.3% chose *very likely*, 33% chose *likely*, 5.6% chose *may*, and 0% chose *unlikely* or *no*. For Group 3, the average response to all five questions was as follows: 81% chose *very likely*, 4.6% chose *likely*, 14% chose *may*, and 0% chose *unlikely* or *no*. For Group 4, the average response to all five questions was as follows: 75% chose *very likely*, 20.6% chose *likely*, 4.3% chose *may*, and 0% chose *unlikely* or *no*. For Group 5, the average response to all five questions was as follows: 78%

chose *very likely*, 16.6% chose *likely*, 5.6% chose *may*, and 0% chose *unlikely* or *no*. In summary, 43.3%-81.0% of participants reported that they were *very likely* to return to another group, 4.6%- 33.3% were *likely*, and 4.3%- 25.5% reported that they *may* return to another group. Of the respondents, 0% reported that they were *unlikely* or *would not* return to another group. The second part of the post questionnaire demonstrated an overall response of *very likely* to return to another group, specifically 67% across all groups and topics. The group on sleep achieved the highest scores (81%) on *very likely* to return to another group and the group presentation on stress achieved the lowest score (43.3%; See Appendix B).

### **Open-Ended Questions**

A total of 8 participants responded to the open-ended questions. The open-ended feedback included comments such as “very informative,” “good group,” “informative and helpful,” “a very good class, “I learned a lot,” and “helpful and informative.” As far as suggestions to improve the program, people listed, “avoiding repeat sessions”, “too much cell phone use”, “bathroom interruptions” and, “too many people talking at once”. In addition, many participants gathered after the group to thank the presenters for the information and provided informal feedback regarding the content, suggestions, and clarification of topics presented. Overall, the majority of the open-ended responses were positive. The group setting posed challenges, as the setting was small and accommodated 12 people maximum. Although the learning environment responses were favorable, represented by an average score of 71% choosing *excellent*, the verbal feedback offered suggestions to improve the environment, including limiting the use of cell phones, less walking in and out to use bathroom or phone, and only having one person talk at a time. One participant suggested using a “talking” stick to encourage the person in possession of the “stick” to be the only one talking. To facilitate a group

setting, offering facilitator training to group presenters is important. Understanding how to facilitate a group effectively creates an environment where participants can receive maximum benefits with minimal interruptions.

To summarize, the majority of respondents rated the programs as *excellent*, *very good*, or *good*. Additionally, the respondents reported that they would be *very likely*, *likely*, or *might be* returning to another group. There were no *fair* or *poor* responses and none of the respondents reported that they were *unlikely* or *would not* return to another group.

### **Missing data**

Despite the simplicity and availability of the questionnaires, 10 participants declined to complete the surveys and were excluded from the data. Out of all the questionnaires completed, 22% of respondents offered open-ended feedback and 100% of all questions were completed on each questionnaire. Help was also offered to participants with completing questionnaires to assist those who may potentially have a literacy or language barrier to education. However, all of the participants declined assistance. The groups were limited to 10-12 scheduled patients and some patients were a “no show.” Due to the complexity of SUD and the unique needs of the population, some people did not complete the post intervention questionnaire. However, efforts were made to support and encourage completion of the questionnaire by offering assistance.

### **Facilitators, Benefits, and Barriers**

One primary benefits of the project included a centrally located office easily accessible by foot and bus. In addition, collaborative relationships existed with sober living programs where participants who received buprenorphine/naloxone prescriptions from program providers were eligible to attend the group sessions. Some challenges faced by patients who struggle with substance use disorder include transportation, failure to complete treatment, and language

barriers. These factors may have impacted the successful completion of the education session and/or questionnaire. The original project was designed with a pre- and post-questionnaire to evaluate effectiveness of the intervention. However, as the project progressed, it was difficult for the DNP student to obtain follow up questionnaires due to participant attrition. Therefore, a post session questionnaire that would provide immediate feedback was utilized after each session.

There were also barriers associated with the patients. Participants were at different stages of recovery. For example, some patients were newly initiating Suboxone therapy, while others were transitioning from Methadone or other programs. With some participants being new in the program and others being in treatment longer, these patient differences could have potentially impacted readiness and acceptance of new knowledge. Another barrier that was found was incorporating mindfulness into the education sessions. The mindfulness techniques proved to be difficult as participants were not always receptive due to attention span, various stages of withdrawal, treatment adherence, personal attitudes, comfort level, and knowledge base. In addition, due to various levels of education, comprehension, and language proficiency, a “one size fits all” approach is also a barrier to effective teaching.

### **Discussion**

The treatment of SUDs requires a multidisciplinary, patient-centered approach. The goal of this project was to determine if a low-cost intervention would improve participants’ skills for self-management of the sequelae of SUDs, while also and promoting wellness in recovery. An innovative and comprehensive educational program that can be easily implemented, accepted by patients, and utilized across various settings was developed and assessed. The success of the educational program was assessed by examining the responses to the follow-up questionnaire. High scores in one or more areas of the questionnaire may demonstrate feasibility and

acceptability of educational initiatives in the treatment of SUD. The results discussed previously demonstrated positive feedback from participants in the educational sessions. In addition, future development of the program includes improving the quality of the education and determining which topics offer the most valuable and meaningful information. The application of Lewin's Change Theory (2011) in the sessions consisted of three parts. By the use of education, participants were made aware of the benefits of stress management and healthy lifestyle choices. Specifically, the identification of unhealthy responses and lifestyle choices, such as high stress levels or lack of sleep, and the subsequent effects on the body were covered. Participants were also provided information regarding the concept of wellness and chronic disease management and how these concepts are important for recovery. The second stage of the theory is unfreezing. Participants were encouraged to dialogue and assist each other with management techniques and recognize detrimental habits that interfered with wellness and recovery. The importance of adequate sleep, exercise, diet, and stress management was stressed across all groups and participants were encouraged to recognize the harmful consequences of unhealthy behaviors. By participating in group education and dialogue, the hope is that participants will embrace healthy lifestyle changes and disease management to achieve positive health outcomes completing the third stage of refreezing and adopting healthier habits.

The results demonstrated a positive outcome by showing that the majority of respondents had a positive response to the educational initiative. Examining the results of the surveys revealed education for chronic disease management may be beneficial for patients. Specifically, education might be able to assist patients with disease management and achieving wellness. In the primary care setting, patients identified with SUD may benefit from wellness education covering diet, exercise, sleep, and stress management as part of routine care to increase

knowledge of chronic disease management. Helping patients to modify their behavior and continue treatment are important components of recovery programs and increasing patient success in recovery programs enhances the long-term chances of recovery success (ASAM, 2015). Providing education in an informal setting may encourage participants to continue in treatment by empowering them with knowledge and skills to improve their health and wellbeing. Recovery is defined as a change process that individuals initiate to improve health and wellness and realize their full potential (Bassuk, Greene, Hanson, Laudet, & Richard, 2016). Health education is an essential piece for positive patient outcomes focusing on health promotion, wellness and health promotion (Gorbunoff & Kummeth, 2014). The lack of knowledge regarding chronic illness management results in poor adherence and poorer health care outcomes in patient populations (Gill et al., 2016). Additionally, patients with SUD often suffer from high rates of infectious disease, overdose, and death as a result of the drug use (Bayles, 2014). Factors that influence health knowledge and retention include: education level, reading fluency, cognitive abilities, and health literacy (Zhang et al., 2016). Patients with limited language proficiency are at an increased risk for adverse outcomes and health disparities, as a result of lack of understanding (Schiaffino, Al-Amin, & Schumaker, 2014). In the current study, more than 50% of the participants were Hispanic, despite the mean population of 24% of total Hispanic patients in the city ("Springfield, Massachusetts," 2016). Identifying the importance of Spanish educational materials and Spanish speaking providers to facilitate learning may improve the delivery of care to Hispanic patients. These steps could also decrease the language barriers in treatment that could have resulted in unfavorable outcomes and suboptimal culturally competent care (Mennis & Stahler, 2015). In the current project, patients who were identified as having limited English language proficiency were transferred to a Spanish-speaking provider for future



education and healthcare needs. To address the need for Spanish materials, the DNP student obtained Spanish language materials on sleep, smoking cessation (not formally covered in the education) and HIV (not formally covered in the education) for participants to review and take home to increase understanding of these topics. Interestingly, many of the topics written in English were unavailable in Spanish, which creates a greater barrier for patients to obtain information in their native language.

Developing an effective intervention is challenging, as one size does not fit all in learning styles and methods. Revisions were made to power points as a result of questions encountered during earlier sessions as well as informal feedback by participants. Some of the specific feedback that was incorporated into the education was simplifying information presented, avoiding use of technological terms, and revising and omitting some confusing information from the presentations. Providing useful, clear, and concrete information helps adult learners apply the knowledge to everyday life (Gorbunoff & Kummeth, 2014). Providing educational material improves health literacy and communication between patient and provider, subsequently improving health care outcomes (Dreeben-Irimia). Considerations of learning styles, literacy levels, and language considerations require the development of learning materials that are easily understood by the target audience. The use of pictures and illustrations, when applicable, will increase understanding and comprehension of materials. The future direction of education in MAT programs might be to determine which topics and methods of learning are most effective in the SUD treatment population.

During the group sessions, many questions arose regarding the various side effects associated with medications used in treatment for nausea, constipation, insomnia, and other possible side effects of MAT treatment. The importance of considering the risks and side effects

associated with medications and non-pharmacological approaches could be beneficial to patients. Many non-pharmacological approaches to common symptoms are available and beneficial to patients. Informal feedback and observation from two physicians who were involved in co-facilitating the group each separately, highlighted the importance of non-pharmacological approaches for relief of symptoms. Based on the multiple questions regarding side effect management, future session topics might include education regarding non-pharmacologic treatments for side effects. All participants were encouraged to discuss any side effects of treatment with their prospective providers. Participants provided feedback that a class covering information on the digestive system, smoking, and sleep would also be helpful, as many participants shared similar concerns. As a result of this feedback, the third session regarding sleep and sleep hygiene was developed and presented to patients with a favorable outcome.

Many participants offered their suggestions to each other regarding things that are helpful for them on stress reduction, sleep, and diet. Informal feedback from some participants included, “doesn’t feel like a group,” “feeling welcome,” and “providers caring about them.”

One challenge that providers face is the retention of patients in treatment. According to the guidelines from the ASAM (2015), the longer the patient is engaged in treatment, the more likely they will be to have a positive outcome. The informal feedback from the providers and participants included in the educational program indicated the sessions were a less formal way to provide group education and fulfill program requirements. These types of educational sessions could potentially increase participation and retention in the program and consequently, reduce the risk of harmful effects of drug use. Participants in the MAT program face a stringent routine of multiple appointments, urine testing, counseling, and provider appointments. The groups

atmosphere and structure may improve patient participation and engagement in treatment by providing a less formal setting for education and dialogue with peers.

### **Conclusion**

Results showed that the educational program was well received and acceptable for use in the MAT setting. Education in chronic disease management and the use of mindfulness techniques were both shown to be feasible and acceptable. These components could prove beneficial in reducing the likelihood of relapse in patients with SUD. The initial intention to integrate mindfulness and education in the original proposal has had the unexpected result of evolving into a primarily educational initiative. An unexpected benefit of the project was the value of education in the treatment of SUD to increase patients' disease management skills. While mindfulness has demonstrated value in the treatment of SUD, future research should investigate the best way to incorporate mindfulness into informal group education sessions or MAT programs. Future research assessing educational initiatives in the treatment of addiction should examine the impact of incorporating wellness teaching into the treatment of SUD. Examining SUD as a chronic illness and teaching patients' disease management is challenging, as teaching initiatives are not considered psychosocial treatments, which is a key component to SUD treatments. Some medical professionals may not recognize the benefit of education in the treatment of SUD due to lack of empirical evidence. Adult learners are a unique population in that learning styles and needs are highly individualized. Each adult learner brings various degrees of literacy levels, knowledge, and understanding and the sharing of this information among peers fosters learning (Gorbunoff & Kummeth, 2014). Avoiding medical terminology and using layperson's terms increased the understanding of the material for all participants. Examining learning styles, literacy levels, and language proficiency could also be beneficial to

develop effective teaching programs used for the treatment of SUD. Evaluation of the effect of education initiatives and its impact on retention in treatment is an important consideration in the treatment of SUD. Identifying which topics of education are beneficial in the treatment of SUD is an area of further study. Examining the usefulness of mindfulness and feasible ways to incorporate mindfulness exercises in group education will be valuable for future direction of holistic treatment programs, as outlined above in Figure 1.

Many avenues exist in the remodeling of care for patients who struggle with addiction. Developing cost effective educational interventions that are easily adaptable for providers will increase comprehensive services across all care arenas. These types of programs could improve outcomes for patients with substance abuse disorders by decreasing the likelihood of relapse and decreasing the harmful effects of substance misuse through improving disease management skills. Offering a multidimensional program that includes medications, psychotherapeutic interventions, life skills, and education could address the unique needs of patients with SUD. Examining current delivery systems, legislative action, collaboration with other providers, and developing evidence-based practice standards are areas outlined in several initiatives to combat the current opioid epidemic. These factors are important considerations for the DNP student because translating best practice initiatives into the care of people with SUD will improve the care delivery system and outcomes for patients. Delivering effective care to people who struggle with substance use disorder could further reduce harm to patients as well as decreasing the economic burden on society. A collective and collaborative effort across all disciplines requires leadership to effect change. Lending a voice to those who are unable to speak will allow the voices of the vulnerable and underserved to be heard and generate equitable healthcare delivery for all people. By increasing awareness of substance abuse treatment options and efforts to

reduce stigma by creating a safe environment, individuals with SUD might be more likely to continue recovery treatment, make healthier choices, and continue on a path to wellness.

Focusing on addiction in the context of the illness/wellness continuum also provides opportunities for health professionals to educate and teach management tools to patients to lessen chances of relapse and harmful effects of substance misuse. The knowledge gained from this intervention will be shared with the stakeholder who is interested in further direction of the intervention and its potential feasibility and practicality for use in his programs.

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## Appendix A

## Helpfulness and understandability questionnaire .

Group 1: Stress (n = 10)	Excellent	Very Good	Good	Fair	Poor
<i>How helpful is the information presented in the program?</i>	50%	30%	20%	0%	0%
<i>How helpful were the handouts?</i>	30%	40%	30%	0%	0%
<i>How easily understood was the information presented?</i>	70%	20%	10%	0%	0%
<i>How effective were the speakers?</i>	60%	20%	20%	0%	0%
<i>Please rate the learning environment.</i>	50%	30%	20%	0%	0%
Group 2: Stress and Triggers (n = 6)	Excellent	Very Good	Good	Fair	Poor
<i>How helpful is the information presented in the program?</i>	67%	17%	17%	0%	0%
<i>How helpful were the handouts?</i>	67%	17%	17%	0%	0%
<i>How easily understood was the information presented?</i>	83%	0%	17%	0%	0%
<i>How effective were the speakers?</i>	83%	0%	17%	0%	0%
<i>Please rate the learning environment.</i>	50%	17%	17%	0%	17%
Group 3: Sleep (n = 7)	Excellent	Very Good	Good	Fair	Poor
<i>How helpful is the information presented in the program?</i>	71%	14%	14%	0%	0%
<i>How helpful were the handouts?</i>	57%	14%	14%	14%	0%
<i>How easily understood was the information presented?</i>	71%	14%	14%	0%	0%
<i>How effective were the speakers?</i>	86%	0%	14%	0%	0%
<i>Please rate the learning environment.</i>	86%	0%	14%	0%	0%

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Group 4: Diet and Exercise ( $n = 8$ )	Excellent	Very Good	Good	Fair	Poor
<i>How helpful is the information presented in the program?</i>	88%	12%	0%	0%	0%
<i>How helpful were the handouts?</i>	88%	0%	12%	0%	0%
<i>How easily understood was the information presented?</i>	88%	12%	0%	0%	0%
<i>How effective were the speakers?</i>	75%	25%	0%	0%	0%
<i>Please rate the learning environment.</i>	88%	0%	12%	0%	0%

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Group 5: Diet ( $n = 6$ )	Excellent	Very Good	Good	Fair	Poor
<i>How helpful is the information presented in the program?</i>	67%	17%	17%	0%	0%
<i>How helpful were the handouts?</i>	50%	33%	17%	0%	0%
<i>How easily understood was the information presented?</i>	100%	0%	0%	0%	0%
<i>How effective were the speakers?</i>	83%	0%	17%	0%	0%
<i>Please rate the learning environment.</i>	83%	17%	0%	0%	0%

## Appendix B

Table 1. Likeliness to return questionnaire

Group 1: Stress ( $n = 10$ )	Very likely	Likely	Maybe	Unlikely	No way
<i>How likely are you to return to another group?</i>	70%	20%	10%	0%	0%
<i>How likely are you to use the information you learned today?</i>	30%	30%	40%	0%	0%
<i>How likely are you to recommend this program?</i>	30%	50%	20%	0%	0%
Group 2: Stress and Triggers ( $n = 6$ )	Very likely	Likely	Maybe	Unlikely	No way
<i>How likely are you to return to another group?</i>	67%	33%	0%	0%	0%
<i>How likely are you to use the information you learned today?</i>	67%	33%	0%	0%	0%
<i>How likely are you to recommend this program?</i>	50%	33%	17%	0%	0%
Group 3: Sleep ( $n = 7$ )	Very likely	Likely	Maybe	Unlikely	No way
<i>How likely are you to return to another group?</i>	86%	0%	14%	0%	0%
<i>How likely are you to use the information you learned today?</i>	71%	14%	14%	0%	0%
<i>How likely are you to recommend this program?</i>	86%	0%	14%	0%	0%
Group 4: Diet and Exercise ( $n = 8$ )	Very likely	Likely	Maybe	Unlikely	No way
<i>How likely are you to return to another group?</i>	88%	12%	0%	0%	0%

<i>How likely are you to use the information you learned today?</i>	63%	37%	0%	0%	0%
<i>How likely are you to recommend this program?</i>	74%	13%	13%	0%	0%

Group 5: Diet (n = 6)	Very likely	Likely	Maybe	Unlikely	No way
<i>How likely are you to return to another group?</i>	100%	0%	0%	0%	0%
<i>How likely are you to use the information you learned today?</i>	67%	17%	17%	0%	0%
<i>How likely are you to recommend this program?</i>	67%	33%	0%	0%	0%

### Appendix C- Literature Review

Implementation of a Mindfulness based Relapse Prevention Educational program in conjunction with a Medication Assisted Treatment program to decrease likelihood of harm relapse in patients with SUD.

Citation	Design	Sample and location where research/ study was performed	Outcomes/Results of the Intervention and/or Objectives	Level of Evidence	Strengths and weaknesses	Author(s) Recommendations for Practice

Bowen <i>et al.</i> <i>JAMA Psychiatry</i> , 71, 547-556.2014	Randomized Clinical Trial	286 eligible individuals who successfully completed initial treatment for substance use disorders at a private, nonprofit treatment facility	At the 12-month follow-up, MBRP participants reported significantly fewer days of substance use and significantly decreased heavy drinking compared with Relapse Prevention (RP) and Treatment as Usual (TAU)	IA	Training and homework differed in TAU groups Training was consistent in other groups although interventions were different and there was lack of self-reporting data and urine testing	Study compared usual treatment, mindfulness-based approaches and cognitive behavioral treatments. Compared to the other methods mindfulness-based relapse prevention (MBRP) demonstrated benefits of decreased substance use after 12 months
Brewer <i>et al.</i> <i>Substance Abuse</i> , 30, 306-317	Randomized control trial	36 patients in an outpatient clinic in New Haven	Laboratory tests show promise in the use of MBT for stress.	IC	Small sample size, English speaking only, unequal lengths of treatments	Mindfulness therapy demonstrates positive direction in addiction treatment and stress management  Further studies are needed for longer term results and effective treatments  .
Grow <i>et al.</i> <i>Addictive Behaviors</i> , 40, 16-20	Randomized Clinical Trial	93 Patients who completed inpatient or outpatient therapies, who were in aftercare treatment programs	To determine the effects of drug and alcohol use and cravings after MBRP treatments and home practice	IB	All participants were fluent in English and predominantly white; brief follow up period; small sample size  Building MBRP practices in daily life is beneficial	Participation in MBRP resulted in increase in home mindfulness practices which subsequently reduced drug and alcohol use

Witkiewitz <i>et al. Addictive Behaviors</i> , 38, 1563-1571	Randomized Control Trial	168 patients from a private non-profit	To follow up on Bowen <i>et al.</i> study to determine is changes in awareness, acceptance and non-judgement impacted post treatment craving scores	IB	Predominately white, used subjective self-reporting data which can be unreliable.	Supported claims that following MBRP latent factors of measures of acceptance, awareness, and nonjudgment mediated relationship between MBRP therapy, reduced cravings; further replication studies needed
Barry <i>et al. Psychiatric Services</i> , 65, 1269-1272	National Questionnaire	709 Participants	Respondents demonstrated increased negative attitudes towards addicted patients and were more likely to accept discriminatory practices	IIIB		Increasing awareness of the ability to treat addictions may help decrease stigma as in mental illness or HIV